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10/526,810	03/04/2005	Nicholas James Midgley	GB920020049US1	8811

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EXAMINER	
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2146	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/526,810	MIDGLEY, NICHOLAS JAMES	
	Examiner	Art Unit	
	Shaq Taha	2146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/08/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22 - 35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a final action for application number 10/526,810based on after non-final filed on 11/08/2007. The original application was filed on 03/04/2005. Claims 22 – 35 are currently pending and have been considered below. Claims 22, 26, and 28 are independent claims.

Applicant's Response

In the applicant's response dated 11/08/2007; the applicant argued against all the rejections set forth on the non-final rejection on 08/08/2007.

Response to Arguments

Rejection under 35 USC 112 (1st Paragraph)

The rejection set forth for claims 22, 26, and 28 under 35 USC – 112 (1^{ST} Paragraph) for introducing new matter has been withdrawn because the specification sufficient explains that if the server has reached an upper threshold of utilization (relating to capacity), then another server should be allocated to the server pool or cluster.

Rejection under 35 USC 112 (2ND Paragraph):

The rejection set forth for claims 22, 24, 26, 27, 28, 29, 30, 32, 33, and 35 under 35 USC – 112 (2nd Paragraph) because it is unclear what the applicant means by a limitation or for insufficient antecedent basis for a limitation has been withdrawn because the applicant's clarification has been added tom the claims.

Rejection under 35 USC 102(e) - (Claims 22 - 33, and 35):

Regarding claim 22, the applicant argues that Bruck et al. (US 6,801,949) do not automatically add another server to a cluster in response to a predetermined upper level of utilization being reached for a server in the cluster.

The examiner disagrees, Bruck et al. automatically adds a new server to the cluster when the operation fails or about to fail, when a server reaches its upper level of utilization or about to fail Bruck automatically adds a machine to the server cluster 310, with no loss in functionality for the cluster, **[Column 7, line 38].**

Regarding claim 24, the applicant argues that Bruck et al. do not remove a functional server from a cluster based on performance data where the server is under utilized such that the server is no longer needed in the cluster.

The examiner disagrees, Bruck et al. removes a server from the cluster without complicating the configuration of the operation, **[Column 3, line 41].**

As shown in Fig. 1, the load balancer the load balancer dispatches requests from the Internet to the appropriate server in the server farm 102, based on server function, availability, and load.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 22 – 33, and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Bruck et al. (US 6,801,949)

- Regarding claim 22 & 36, Bruck et al. teaches a method for allocating servers to a cluster of servers, **[The front layer machines comprise a server cluster that performs fail-over and dynamic load balancing for both server layers, (Column 2 lines 44 – 46), (adds a machine to the server cluster 310, with no loss in functionality for the cluster, [Column 7, line 38];**

  said method comprising the steps of: automatically sending performance data, **[data performing and traffic reconfiguration , Fig. 2]**, of a first server to a second server, said first server being part of said cluster of servers, **[a distributed server cluster for computer network data traffic, (Column 3, lines 19 – 23)];**

  based on the performance data, said second server determining if said first server has reached a predetermined upper level of utilization, **[Accordingly,**

when data traffic arrives at Server 2 for the IP address (200.199.198.1), Server 2 can determine from packet information of the data that the TCP connection with which the data is associated was initiated prior to the address reassignment to Server 2, and in fact was started with Server 1, (Column 28, lines 7 – 12) & (Fig. 2)];

and if said first server has reached said predetermined upper level of utilization, **[Fig. 1, Load balancer 104];** said second server automatically sending a reconfiguration request to a server responsible for allocating servers to said cluster to allocate another server to said cluster, **[communicating with a plurality of server computers that are all members of a first subnet of network addresses over which network data is sent and received wherein the communication includes state sharing information with a dynamic reconfiguration protocol, (Column 40, lines 24 – 34)];**

and in response, said responsible server automatically identifying another, **[and the server identifies the distributed server that originally had the assigned IP address and with which the previous client-server connection existed, (Column 28, lines 43 – 46)];**

available server and connection information for said other server and automatically allocating said other server to said cluster, **[In another aspect of the server cluster, servers can be dynamically added and deleted from the cluster without complicated configuration operations for the cluster,**

(Column 3, lines 6 – 10)].

- Regarding claim 23, Bruck teaches a method wherein the step of automatically allocating said other server to said cluster comprises the steps of updating configuration file of said responsible server to list said other server as part of said cluster, **[Fig. 3].**

- Regarding claim 24 & 37, Bruck teaches a method further comprising the steps of: based on the performance data, said second server determining if said first server is functional but under utilized such that said first server is no longer needed in said cluster, **[removes a server from the cluster without complicating the configuration of the operation, [Column 3, line 41];** and if said first server is functional but under utilized such that said first server is no longer needed in said cluster, said second server automatically sending a reconfiguration request to said server responsible for allocating servers, **[Distributed servers, Fig. 3]**, to said cluster to de-allocate said first server from said cluster, and in response, said responsible server automatically de-allocating said first server from said cluster, **[wherein the communication includes state sharing information with a dynamic reconfiguration protocol that permits reassignment of network addresses among the front layer servers and**

specifies state information sharing and load information sharing among the front layer servers; (Column 41, lines 35 – 50)].

- Regarding claim 25, Bruck teaches a method wherein the step of automatically de-allocating said first server from said cluster comprises the step of updating a configuration file of said responsible server to remove said first server from said cluster, **[In another aspect of the server cluster, servers can be dynamically added and deleted from the cluster without complicated configuration operations for the cluster, (Column 3, lines 6 – 10)].**

- Regarding claim 26, Bruck teaches a system for allocating servers to a cluster of servers, **[The front layer machines comprise a server cluster that performs fail-over and dynamic load balancing for both server layers, (Column 2 lines 44 – 46)];**

  said system comprising: means for sending performance data of a first server to a second server, said first server being part of said cluster of servers, **[a distributed server cluster for computer network data traffic dynamically reconfigures traffic assignments among multiple server machines for increased network availability, (Column 3, lines 19 – 23) & (Fig. 2)];**

  means, based on the performance data, within said second server for determining if said first server has reached a predetermined upper level of utilization, **[Accordingly, when data traffic arrives at Server 2 for the IP**

address, Server 2 can determine from packet information of the data that the TCP connection with which the data is associated was initiated prior to the address reassignment to Server 2, and in fact was started with Server 1, (Column 28, lines 7 – 12) & (Fig. 1, Load balancer 104)];

and if said first server has reached said predetermined upper level of utilization, automatically sending a reconfiguration request to a server responsible for allocating servers to said cluster to automatically allocate another server to said cluster, **[communicating with a plurality of server computers that are all members of a first subnet of network addresses over which network data is sent and received, comprising a front layer of servers, wherein the communication includes state sharing information with a dynamic reconfiguration protocol that permits reassignment of network addresses among the front layer servers and specifies state information sharing and load information sharing among the front layer servers, (Column 40, lines 24 – 34)];**

and means, responsive to said reconfiguration request, within said responsible server for automatically identifying another, **[and the server identifies the distributed server that originally had the assigned IP address and with which the previous client-server connection existed, (Column 28, lines 43 – 46)];**

available server and connection information for said other server and automatically allocating said other server to said cluster, **[In another aspect of the server cluster, servers can be dynamically added and deleted from the cluster without complicated configuration operations for the cluster, (Column 3, lines 6 – 10)].**

- Regarding claim 27, Bruck teaches a system further comprising: means, based on the performance data, within said second server for determining if said first server is functional but under utilized such that said first server is no longer needed in said cluster , and if said first server is functional but under utilized such that said first server is no longer needed in said cluster, **[receiving network data traffic through a network interface that permits communication between the server computer and other computers, communicating with a plurality of server computers that are all members of a first subnet of network addresses over which network data is sent and received, comprising a front layer of servers, (Column 41, lines 29 – 35)];**
automatically sending a reconfiguration request to said server responsible for allocating servers to said cluster to de-allocate said first server from said cluster; and means, responsive to the de-allocation reconfiguration request, within said responsible server for automatically de-allocating said first server from said cluster, **[wherein the communication includes state sharing information with a dynamic reconfiguration protocol that permits reassignment of network**

addresses among the front layer servers and specifies state information sharing and load information sharing among the front layer servers; communicating with a plurality of network computers that are members of a second subnet of network addresses to send and receive network data traffic; sending a data packet with the request information to a computer of the second subnet; storing header information for the data request; receiving data packets of the requested data file from the second subnet computer and forwarding the data packets to the requesting computer, (Column 41, lines 35 – 50)].

- Regarding claim 28, Bruck teaches a method for managing servers, said method comprising the steps of: a first server determining performance data for said first server and performance data for a second server, **[Accordingly, when data traffic arrives at Server 2 for the IP address (200.199.198.1), Server 2 can determine from packet information of the data that the TCP connection with which the data is associated was initiated prior to the address reassignment to Server 2, and in fact was started with Server 1, (Column 28, lines 7 – 12)];**

  and automatically reporting to a third server said performance data for said first server and said performance data for said second servers, [The distributed server cluster software would then report the results as part of the GUI, as described further below, (Column 20, lines 10 – 16)];

said first and second servers being in a cluster of servers, **[Fig. 2];**

based on the reported performance data, said third server determining if said first server or said second server has reached a predetermined upper level of utilization, **[The present invention provides a scalable, distributed, highly available, load balancing server system having multiple machines functioning as a front server layer between the network and a back-end server layer having multiple machines functioning as Web file servers, FTP servers, or other application servers and provides a convenient graphical user interface (GUI) for operating the system, (Column 2, lines 37 – 45)];**

and if said first server or said second server has reached said predetermined upper level of utilization, said third server sending a reconfiguration request to said first server to reduce subsequent utilization of the server, which has reached said, predetermined upper level of utilization, **[The distributed server next receives the requested data (for example, a packet for a Web page or for an FTP file) from the Web server and forwards it to the requesting client machine, as indicated by the flow diagram box numbered 1806. While the requested data is forwarded to the client, the distributed server maintains state data on the client communications session, (Column 31, lines 12 – 19)];**

and said first server automatically reconfigurating itself to reduce subsequent utilization of the server, which has reached said, predetermined upper level of utilization, **[Finally, in an optimization step, the authoritative node sends**

forwarding information to the default reply node. The default reply node stores this information, which indicates the node to which the authoritative node forwarded the reply for symmetric communication. On subsequent reply messages received at the default reply node, the distributed server of the default reply node will know which server should receive the reply message, and will directly forward the reply message to that node. Thus, the default reply node can skip the step of sending the reply message to the authoritative node, (Column 33, lines 56 – 65)].

- Regarding claim 29, Bruck teaches a method further comprising the earlier steps of: said first server receiving a request from a client device and determining whether said first server should handle said request, **[In the first operation, represented by the flow diagram box numbered 1802, a distributed server (DS) in a server cluster receives a data file request and sends along a packet with the request information to an appropriate Web server (WS) of a server farm, (Column 31, lines 1 – 6)];**
and if so, said first server handling said request, and if not, said first server identifying said second server as available to handle said request and forwarding the request to said second server for handling, **[When the authoritative node receives the data request, the authoritative node determines which distributed server in the server cluster will handle the data traffic associated with this request from this client to the designated Web server,**

(Column 33, lines 25 – 31)].

- Regarding claim 30, Bruck teaches a method wherein the step of said first server automatically reconfigurating itself comprises the step of said first server updating a configuration file which lists one or more servers that are available to handle specified types of client requests, **[In another aspect of the server cluster, servers can be dynamically added and deleted from the cluster without complicated configuration operations for the cluster, (Column 3, lines 6 – 10) & (FIG.3)].**

- Regarding claim 31, Bruck teaches a method wherein the step of said first server automatically reconfigurating itself comprises the step of automatically identifying a fourth, available server and connection information for said fourth server and automatically allocating said fourth server to said cluster, **[In another aspect of the server cluster, servers can be dynamically added and deleted from the cluster without complicated configuration operations for the cluster, (Column 3, lines 6 – 10) & (FIG.3)].**

- Regarding claim 32, Bruck teaches a method further comprising the steps of: based on said performance data, said third server determining if said first server or said second server is functional but under utilized such that said first server or said second server is no longer needed in said cluster, **[receiving network data**

traffic through a network interface that permits communication between the server computer and other computers, communicating with a plurality of server computers that are all members of a first subnet of network addresses over which network data is sent and received, comprising a front layer of servers, (Column 41, lines 29 – 35)];

and if said first server or said second server is functional but under utilized such that said first server or said second server is no longer needed in said cluster, said third server sending a reconfiguration request to said first server to de-allocate the first or second server which is functional but under utilized and no longer needed in said cluster, and said first server automatically reconfiguring it self to de-allocate from said cluster said first server or said second server which is under utilized and no longer needed in said cluster, **[wherein the communication includes state sharing information with a dynamic reconfiguration protocol that permits reassignment of network addresses among the front layer servers and specifies state information sharing and load information sharing among the front layer servers; communicating with a plurality of network computers that are members of a second subnet of network addresses to send and receive network data traffic; sending a data packet with the request information to a computer of the second subnet; storing header information for the data request; receiving data packets of the requested data file from the second subnet computer and**

forwarding the data packets to the requesting computer, (Column 41, lines 35 – 50)].

- Regarding claim 33, Bruck teaches a method wherein the automatic de-allocating reconfiguring step comprises the step of adding to a pool of available servers, said server which is functional but under utilized and no longer needed in said cluster, **[receiving network data traffic through a network interface that permits communication between the server computer and other computers, communicating with a plurality of server computers that are all members of a first subnet of network addresses over which network data is sent and received, comprising a front layer of servers, (Column 41, lines 29 – 35)];** such that if a server in said cluster subsequently reaches said predetermined upper level of utilization, the de-allocated server can be re-allocated to said cluster, **[wherein the communication includes state sharing information with a dynamic reconfiguration protocol that permits reassignment of network addresses among the front layer servers and specifies state information sharing and load information sharing among the front layer servers; communicating with a plurality of network computers that are members of a second subnet of network addresses to send and receive network data traffic; sending a data packet with the request information to a computer of the second subnet; storing header information for the data request; receiving data packets of the requested data file from the second subnet**

computer and forwarding the data packets to the requesting computer, (Column 41, lines 35 – 50)].

- Regarding claim 35, Bruck teaches a method wherein the step of said first server determining whether said first server should handle said request, comprises the step of said first server determining if said request is for data that is currently cached at said first server, and if so, the step of said first server handling said request comprises the step of said first server supplying said data from the cache at said first server to said client device, **[This is advantageous because a cluster of servers may assign a distributed server to handle incoming traffic to be forwarded to a Web server farm, but that distributed server may be different from the default server that will be used by the Web server for replies. Thus, the distributed server handling incoming traffic destined for a Web server will not be the same server that receives return responses from the Web server. This results in asymmetric traffic loading among the distributed servers, and is undesirable in some cases where symmetric routing is required, (Column 32, lines 53 – 67)].**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruck et al. (US 6,801,949) as applied to claims 1 above, and further in view of Voskuil et al. (US 20020032768).

- Regarding Claim 34 Bruck et al. teaches the method according to claim 28, as described above. Bruck further teaches a scalable, distributed, highly available, load balancing server system having multiple machines is provided that functions as a front server layer between a network (such as the Internet) and a back-end server layer having multiple machines functioning as Web file servers, FTP servers, or other application servers, **(See Abstract).**

  Bruck et al. differs from the claimed invention is that XML is not taught in Sequeira et al.

  Voskuil teaches a system for automatically configuring applications installed on an end user computer system includes an auto profile server connected to a network such as the Internet. The end user computer includes a third party client

application that communicates with the auto profile server to send information to and receive information from the end user computer, **(See Abstract),** and further teaches that the instructions can be incorporated in an XML data structure 246 that is transmitted from the server, **(Paragraph 0029).** Voskuil provides the advantage of using XML to implement data stream.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Bruck by including XML as taught by Voskuil. One of ordinary skill in the art would have been motivated to make this modification in order provide the advantage of providing the advantage of using XML data streams; and said third server sends said reconfiguration request to said first server using an XML data stream.

Conclusion

The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See **PEP 707.05(c)**.

The following are analogous art because they are from the same field of endeavor of Remote Dynamic Configuration of a Web Server to Provide a Capacity on Demand:

- Bruck et al. (US 6,801,949).
- Voskuil et al. (US 20020032768).
- Coleman et al. (US 2004/0181794).
- Sarukkai et al. (US 6,571,288).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Shaq Taha** whose telephone number is 571-270-1921. The examiner can normally be reached on 8:30am-5pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Jeff Pwu** can be reached on 571-272-6798.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

01/14/07

S. Taha

JEFFREY PWU
SUPERVISORY PATENT EXAMINER